



EVALUATION OF MAGNITUDE AND AXIS OF RESIDUAL ASTIGMATISM AFTER TORIC IOL IMPLANT USING THREE DIFFERENT APPROACHES FOR CATARACT SURGERY

FRANCESCO CARONES, MD
MILAN, ITALY

CONSULTANT FOR ALCON, AMO, WAVELIGHT, ACUFOCUS



TECHNOLOGY EVOLUTION IN CATARACT SURGERY

- Why do we invest in technology?
- Why do we use advanced and sophisticated surgical instruments?
- Why are we dedicating hours to complex measurements?
- Why are we upgrading our platforms even when they are still efficient?



TECHNOLOGY EVOLUTION IN CATARACT SURGERY

MODERN CATARACT SURGERY FOCUSES ON:

- Safety. Lower complication rate
- Accuracy. More eyes closer to refractive target
- Efficiency. Less interindividual variables
- Patient acceptance. Perception of better procedure
- Business aspects. Technology costs



THE ALCON CATARACT REFRACTIVE SUITE



VERION™ IMAGE
GUIDED SYSTEM



LENSX® LASER



LUXOR™ LX3 WITH Q-VUE™
OPHTHALMIC MICROSCOPE



CENTURION®
VISION SYSTEM



REGISTRATION



CENTRATION AND ALIGNMENT CHECK





IOL CENTRATION AND AXIS ALIGNMENT



FINAL ASSESSMENT





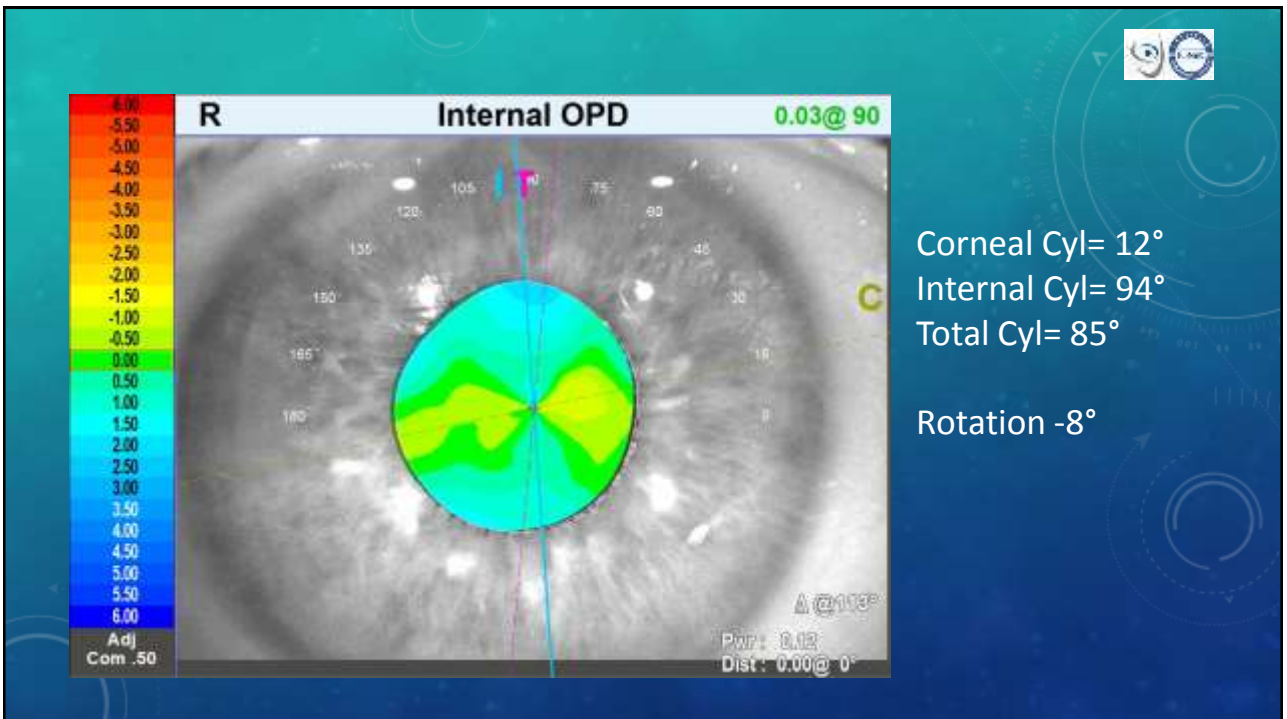
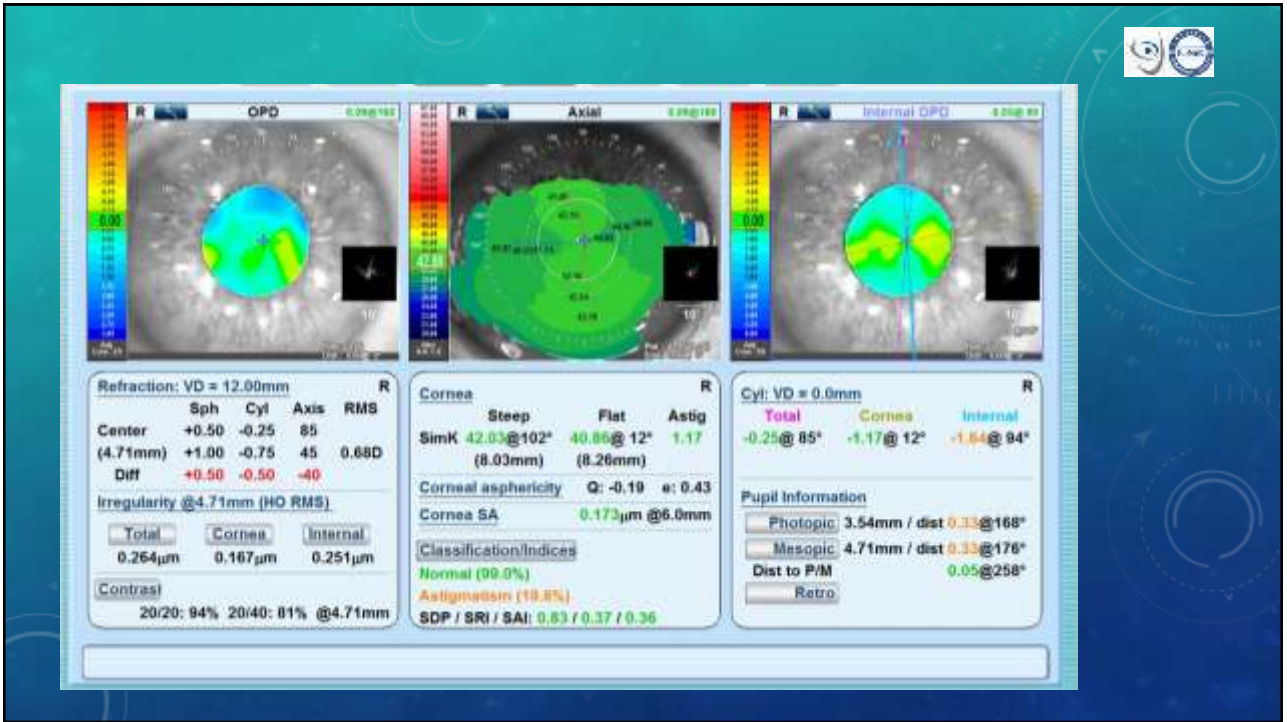
DOES IT ALL REALLY MATTER?

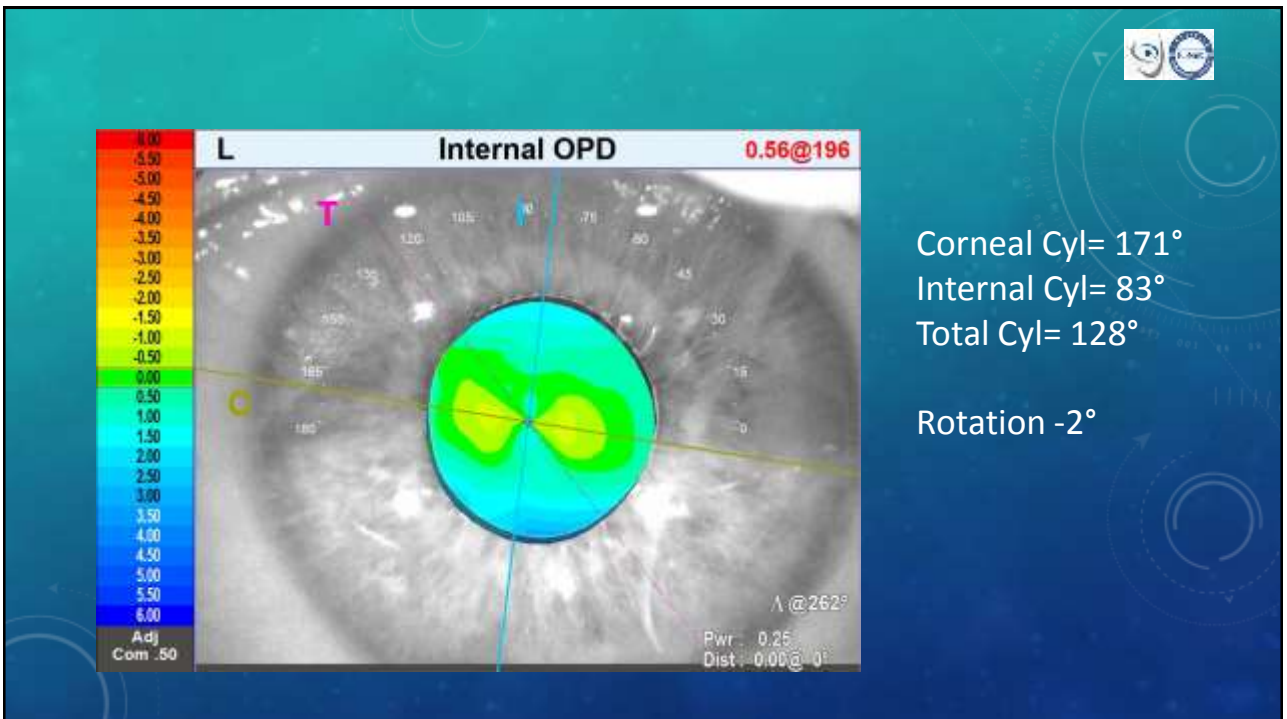
- 60 patients, 120 eyes (axial length 22.0 to 24.5 mm)
- Cataract or refractive lens exchange
- Preoperative corneal astigmatism higher than 1.00 D
- IQ toric or ReSTOR toric to be implanted
- Same surgeon, assessment, protocol, formula, calculation, incision size, etc.
- 3 groups, each 20 patients (40 eyes):
 - Standard phaco (2.0 mm temporal incision, bimanual I/A, manual marks)
 - FLACS (same but with LenSx, manual marks alignment)
 - FLACS and Verion (same but with LenSx and Verion for all phases)



CLINICAL ASSESSMENT

- Standard pre-postoperative evaluation (refraction, visual acuity, etc.)
- OPD-Scan III (Nidek) to objectively measure postoperative astigmatism
 - Anterior surface corneal astigmatism (Sim-K)
 - Internal astigmatism (IOL)
 - Total astigmatism (residual astigmatism)







KEY PERFORMANCE INDICATORS & RESULTS

	Standard Phaco
Eyes within ± 0.50 D SE	32/40 (80%)
Eyes within ± 0.25 D SE	25/40 (62.5%)
Residual cyl ≤ 0.75 D	34/40 (85%)
Residual cyl ≤ 0.50 D	19/40 (47.5%)
Axis rotation $\leq \pm 10^\circ$	32/40 (80%)
Axis rotation $\leq \pm 5^\circ$	12/40 (30%)



KEY PERFORMANCE INDICATORS & RESULTS

	Standard Phaco	FLACS
Eyes within ± 0.50 D SE	32/40 (80%)	34/40 (85%)
Eyes within ± 0.25 D SE	25/40 (62.5%)	26/40 (65%)
Residual cyl ≤ 0.75 D	34/40 (85%)	34/40 (85%)
Residual cyl ≤ 0.50 D	19/40 (47.5%)	21/40 (52.5%)
Axis rotation $\leq \pm 10^\circ$	32/40 (80%)	31/40 (77.5%)
Axis rotation $\leq \pm 5^\circ$	12/40 (30%)	15/40 (37.5%)



KEY PERFORMANCE INDICATORS & RESULTS

	Standard Phaco	FLACS	FLACS + Verion
Eyes within ± 0.50 D SE	32/40 (80%)	34/40 (85%)	36/40 (90%)
Eyes within ± 0.25 D SE	25/40 (62.5%)	26/40 (65%)	28/40 (70%)
Residual cyl ≤ 0.75 D	34/40 (85%)	34/40 (85%)	40/40 (100%)
Residual cyl ≤ 0.50 D	19/40 (47.5%)	21/40 (52.5%)	35/40 (87.5%)
Axis rotation $\leq \pm 10^\circ$	32/40 (80%)	31/40 (77.5%)	39/40 (97.5%)
Axis rotation $\leq \pm 5^\circ$	12/40 (30%)	15/40 (37.5%)	30/40 (75%)



COMMENTS ON RESULTS

- Standard phaco surgery is fairly accurate
- FLACS *per se* does not improve accuracy (neither SE or cyl). Advantages of FLACS are other (safety, efficiency, patient acceptance)
- Verion *and* FLACS (Verion used to guide all surgery phases) led to significantly better refractive results
 - SE= 80% vs. 90% of eyes within 0.50 D
 - Residual cyl= 47.5% vs. 87.5% of eyes with 0.50 D or less
 - Axis rotation= 30% vs. 75% of eyes with 5° or less



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→ BECAUSE REFRACTIVE OUTCOMES ARE BETTER!



THANK YOU!